Possible Impacts

of Proposed Dan River Water Withdrawals

on the City of Danville

by

Barry T. Dunkley

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Summary of Water and Wastewater Usage in Danville

A. Water

1. City Water Treatment Plant (WTP)

a. Usage – 8.11 MGD

b. Capacity – 18 MGD

2. City Industrial WTP (Goodyear and City Wastewater Treatment Plant)

a. Usage – < 1 MGD

b. Capacity – 3 MGD (approved for 5 MGD)

3. Dan River WTP (Process water only)

a. Usage – 7 MGD

Capacity – 16 MGD

B. Wastewater

1. Only one wastewater treatment plant (WWTP) – City's Northside WWTP

2. Usage – 13.49 MGD

Capacity – 24.0 MGD

B. Summary

1. Water used - 16.11 MGD

2. Treated wastewater - 13.49 MGD

3. Water lost - 2.62 MGD or 16.3%

Proposed Water Withdrawals

A. Roxboro/Person County/Yanceyville

1. Withdraw 30 MGD just west of Milton

2. Initially only Roxboro and Person County

3. Yanceyville will secure property for intake location

Proposed power plant would use 7 – 8 MGD for cooling water

A. Eden

1. Current usage – 11.5 MGD

2. Capacity – 20.5 MGD

3. Proposed 21 MGD additional withdrawal

4. Intake problems

a. Water depth

b. Used three portable pumps, 5 MGD each

c. Portable pumping cost $170,000 ±

1. New intake

a. Location: Dan River ½ mile below confluence of Smith River with Dan River

b. Intake design 2004 – 2005

Preliminary cost estimate - $5 million

Issues of Concern

A. Water quality concerns

1. Danville wastewater treatment plant 10.4 miles upstream

2. Nitrogen and phosphorous removal

3. Disinfection process

Drought management plans

A. Actual need

1. Roxboro/Person County

a. Current usage 3.76 MGD (has been higher – 5 MGD)

b. Power plant – 7 MGD

c. Area in Neus and Tar watershed – 1.5 MGD

d. Total current and power plant 10.7 MGD– Capacity 11.7 MGD

e. Total current, power plant and future16.7 MGD – Capacity 11.7 MGD

f. Without power plant no expansion needed

g. Wastewater returned to Dan River Basin – 2 MGD (if power plant built)

Water loss – 5.2 MGD + 1.9 MGD = 7.1 MGD or 43% of 16.7 MGD

1. Eden

A. No documented need

B. Building intake to allow expansion

C. Interbasin Transfer – Danville opposes

D. Water withdrawal capacity of Dan River

D. Statistical Data of Dan River

1. Gauge at Norfolk Southern Railway Bridge (1934 – 1995)

a. Annual mean – 2287 cfs – 1,475 MGD

b. Lowest daily mean – 110 cfs – 71 MGD

2. Gauge at Manway Bridge at NSWWTP (1996 – 2001)

a. Annual mean – 2093 cfs = 1,350 MGD

b. Lowest daily mean – 229 cfs = 148 MGD (September 5, 1996)

c. For 2002 Lowest daily mean 104 cfs – 67 MGD (August 15, 2002)

E. Conservation